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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,735	11/19/2001	Avi J. Ashkenazi	P2730P1C61	2513

35489 7590 05/06/2004

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EXAMINER	
LANDSMAN, ROBERT S	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/989,735	ASHKENAZI ET AL.	
	Examiner	Art Unit	
	Robert Landsman	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *119-138* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *119-138* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/24/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Sequence Comparisons A + B*

DETAILED ACTION

1. Formal Matters

A. The Preliminary Amendment dated 11/19/01, has been entered into the record.

B. The Preliminary Amendment dated 9/3/01, has been entered into the record.

C. Claims 28-40 are pending and are the subject of this Office Action.

2. Priority

Due to the excessive number of applications from which the present application claims benefit, priority cannot be determined. However, the Examiner has concluded that the subject matter defined in this application is not supported by any of the applications in the chain of priority because the presently claimed subject matter is not supported by a specific, substantial or well-established utility, nor, for this reason, is it enabled. Accordingly, the subject matter defined in claims 119-138 has an effective filing date of 11/19/01, which is the filing date of the present application.

Should the applicant disagree with the examiner's factual determination above, it is incumbent upon the applicant to provide the serial number and specific page number(s) of any parent application filed prior to 11/19/01 which specifically supports the particular claim limitation for each and every claim limitation in all the pending claims which applicant considers to have been in possession of and fully enabled for prior to 11/19/01.

3. Information Disclosure Statement

A. References A1 and A2 on the IDS dated 5/24/02 have been lined through since they are not in proper format, including author and accession number.

4. Specification

A. Though none could be found, due to the length of the specification, Applicants are reminded that embedded hyperlink and/or other form of browser-executable code are not permitted in the specification. See MPEP § 608.01.

B. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title recites polypeptides and polynucleotides whereas the claims are drawn to polynucleotides.

C. The specification is objected to since the status of application 09/380,137 should be updated to "now abandoned."

5. Claim Objections

A. The syntax of claims 119-138 could be improved by replacing the phrase "shown in Figure 240 (SEQ ID NO:345)" with "of SEQ ID NO:345" and "shown in Figure 239 (SEQ ID NO:344)" with "of SEQ ID NO:344" where appropriate.

6. Claim Rejections - 35 USC § 112, first paragraph - enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

A. Claims 119-138 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The deposit of the biological material is considered necessary for the enablement of the current invention (see MPEP Chapter 2400 and 37 C.F.R. §§ 1.801-1.809). Elements required for practicing a claimed invention must be known and readily available to the public or obtainable by a repeatable method set forth in the specification. If a deposit (209976) is made under the terms of the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (e.g. see 961 OG 21, 1977), and Applicants, their assignee or their agent needs to provide a declaration containing the following:

1. the current address of the ATCC.
2. a declaration, or statement over attorney's signature stating that all restrictions imposed by the depositor on the availability to the public of the deposited biological material be irrevocably removed upon the granting of the patent (see MPEP Chapter 2410.01 and 37 C.F.R. § 1.808.

C. Furthermore, even if a deposit under the Budapest Treaty were made, claims 119-138 would still be rejected under 35 USC 112, first paragraph, because the specification, while then being enabling for SEQ ID NO:344 and 345, does not reasonably provide enablement for polynucleotides or polypeptides having at least 80%, 85%, 90%, 95% or 99% sequence identity to SEQ ID NO:344 or 345, to the protein encoded by ATCC No. 209976, for the extracellular domain thereof, or for vectors and host cells

containing these polynucleotides. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. There is no functional limitation in the claims. The claims encompass an unreasonable number of inoperative polypeptides, or polynucleotides which encode these polypeptides, which the skilled artisan would not know how to use.

There are no working examples of polynucleotides or polypeptides less than 100% identical to SEQ ID NO:344 or 345, or the mature form thereof (i.e. lacking its signal peptide). The skilled artisan would not know how to use non-identical polypeptides or polynucleotides on the basis of teachings in the prior art or specification unless they possessed a specific function disclosed in the instant specification, in which there is none. While the specification generally describes homologous proteins, Applicants still have not taught to which family of proteins the protein of the present invention belongs. The specification does not provide guidance for using polynucleotides encoding polypeptides related to (*i.e.,* 80%-99% identity) but not identical to SEQ ID NO:344 or 345 which do not have any specific, known function. The claims are broad because they do not require the claimed polypeptide to be identical to the disclosed sequence and because the claims have no functional limitation.

For these reasons, which include the complexity and unpredictability of the nature of the invention and art in terms of the diversity of proteins and lack of knowledge about function(s) of encompassed polypeptides structurally related to SEQ ID NO:345, or their encoding polynucleotides (e.g. SEQ ID NO:344) the lack of direction or guidance for using polypeptides that are not identical to SEQ ID NO:345, and the breadth of the claims for structure without function, it would require undue experimentation to use the invention commensurate in scope with the claims.

7. Claim Rejections - 35 USC § 112, first paragraph – written description

A. Claims 119-138 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to polynucleotides having at least 80%, 85%, 90%, 95% or 99% sequence identity with SEQ ID NO:344 as well as vectors and host cells. The claims do not require that the polynucleotides or encoded polypeptides of the present invention possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of polypeptides that is defined only by sequence identity.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of compete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. There is not even identification of any particular portion of the structure that must be conserved. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, only isolated polypeptides comprising the amino acid sequence set forth in SEQ ID NO:345, or encoded by SEQ ID NO:344, but not the full breadth of the claims, meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

8. Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 119-138 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claims 119-138 are vague and indefinite since it is not clear whether or not the protein encoded by the polynucleotide of the present invention is a soluble protein (e.g protease), nor is it disclosed as being expressed on a cell surface. Accordingly, the limitation that the claimed protein comprises an "extracellular domain" is indefinite, as the art does not recognize soluble proteins as having such domains. Further, if the protein had an extracellular domain, the recitation of "the extracellular domain"..."lacking its associated signal sequence" is indefinite as a signal sequence is not generally considered to be part of an extracellular domain, as signal sequences are cleaved from said domains in the process of secretion from the cell.

B. Claims 132-134 are vague and indefinite since the claim recites "hybridizes" without the recitation of any conditions, or recites "stringent conditions: wherein these conditions are not known. Nucleic acid molecules which hybridize under conditions of "low" stringency would not necessarily hybridize under conditions of "high" stringency. Furthermore, not all conditions of "high" or "low" stringency, for example, are the same. Therefore, it is required that Applicants amend the claims to recite the exact hybridization conditions without using indefinite phrases such as "*for example*" **without adding new matter**.

9. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

A. Claims 119-138 are rejected under 35 U.S.C. 102(b) as being anticipated by Ni et al. (U.S. Patent No. 6,566,478). The claims recite a polynucleotide at least 80% identical to that of SEQ ID NO:344 or encoding SEQ ID NO:345, as well as fragments (e.g. extracellular domains, with and without signal sequences) thereof. The amino acids encoding the extracellular domain of this protein are not known. The claims also recite nucleic acid molecules which hybridize to SEQ ID NO:344, or one encoding SEQ ID NO:345 as well as vectors and host cells. Ni teach a polynucleotide which is 51% identical to SEQ ID NO:344 (Sequence Comparison A) and which encodes the polypeptide which is 89% identical to SEQ ID NO:345 (Sequence Comparison B) as well as vectors and host cells (Examples 1, 5, 7 and 8). This nucleic acid molecule will hybridize to that of the present invention even under the most stringent conditions.

11. Conclusion

A. No claim is allowable.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Landsman whose telephone number is (703) 306-3407. The examiner can normally be reached on Monday - Friday from 8:00 AM to 5:00 PM (Eastern time) and alternate Fridays from 8:00 AM to 5:00 PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623.

Official papers filed by fax should be directed to (703) 308-4242. Fax draft or informal communications with the examiner should be directed to (703) 308-0294.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Robert Landsman, Ph.D.
Patent Examiner
Group 1600
May 5, 2004

ROBERT LANDSMAN
PATENT EXAMINER

Sequence Comparison A

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; Sequence 11, Application US/09244111
; Patent No. 6566498
; GENERAL INFORMATION:
;  APPLICANT: Ni, et al.
;  TITLE OF INVENTION: Human Serine Protease and Serpin Polypeptides
;  FILE REFERENCE: PF391
;  CURRENT APPLICATION NUMBER: US/09/244,111
;  CURRENT FILING DATE: 1999-02-04
;  EARLIER APPLICATION NUMBER: 60/073,961
;  EARLIER FILING DATE: 1998-02-06
;  NUMBER OF SEQ ID NOS: 13
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
;   LENGTH: 478
;   TYPE: DNA
;   ORGANISM: Homo sapiens
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (19)..(249)
US-09-244-111-11

  Query Match            51.1%;  Score 389.6;  DB 4;  Length 478;
  Best Local Similarity  96.6%;  Pred. No. 4e-117;
  Matches  452;  Conservative    0;  Mismatches    9;  Indels    7;  Gaps    5;

Qy          1 CAACATGGGGTCCAGCAGCTTCTTGGTCCTCATGGTGTCTCTCGTTCTTGTGACCCTGGT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         15 CAACATGGGGTCCAGCAGCTTCTTGGTCCTCATGGTGTCTCTCGTTCTTGTGACCCTGGT 74

Qy         61 GGCTGTGGAAGGAGTTAAAGAGGGTATAGAGAAAGCAGGGGTTTGCCCAGCTGACAACGT 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         75 GGCTGTGGAAGGAGTTAAAGAGGGTATAGAGAAAGCAGGGGTTTGCCCAGCTGACAACGT 134

Qy        121 ACGCTGCTTCAAGTCCGATCCTCCCCAGTGTCACACAGACCAGGACTGTCTGGGGGAAAG 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        135 ACGCTGCTTCAAGTCCGATCCTCCCCAGTGTCACACAGACCAGGACTGTCTGGGGGAAAG 194

Qy        181 GAAGTGTTGTTACCTGCACTGTGGCTTCAAGTGTGTGATTCCTGTGAAGGAACTGGAAGA 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||   |   |||||
Db        195 GAAGTGTTGTTACCTGCACTGTGGCTTCAAGTGTGTGATTCCTGTGAAG--AACTGAAGA 252

Qy        241 AGGAGGAAACAAGGATGAAGATGTGTCAAGGCCATACCCTGAGCCAGGATGGG-AGGCCA 299
              |||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db        253 AGGAGGAAACAAGGATGAAGATGTGTCAAGGCCATACCCTGAGCCAGGATGGGAAGGCCA 312

Qy        300 AGTGTCCAGGCTCCTCCTCT--ACCAGGTGTCCTCAGAAATGATGCTGGGTCCTTTCTAC 357
              ||||||||||||||||||  ||||||||||||||||||||||||||||||||||||||||
Db        313 AGTGTCCAGGCTCCTCCTCTACACCAGGTGTCCTCAGAAATGATGCTGGGTCCTTTCTAC 372

Qy        358 CTCTGGGGGTCACTCTCACTTGGCACCTGCCCCTGAGGGTCCTGAGACTTGGAATATGGA 417
              |||||||||||| |||||||||||||||||||| |||||||||||||||||||||||||
Db        373 CTCTGGGGGTCA-TCTCACTTGGCACCTGCCCCTGA-GGTCCTGAGACTTGGAATATGGA 430

Qy        418 AGAAGCAATACCCAACCCCACCAAAGAAAACCTGAGCTTGAAGTCCTT 465
              |||||||||||||||||||||||||||||||||  |   | ||
Db        431 AGAAGCAATACCCAACCCCACCAAAGAAAACCTGAGCTGAAGTCCTTT 478
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Sequence Comparism B

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LOCUS       AR337571                 478 bp    DNA     linear   PAT 17-AUG-2003
DEFINITION  Sequence 11 from patent US 6566498.
ACCESSION   AR337571
VERSION     AR337571.1  GI:33723966
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 478)
  AUTHORS   Ni,J. and Ruben,S.M.
  TITLE     Human serine protease and serpin polypeptides
  JOURNAL   Patent: US 6566498-A 11 20-MAY-2003;
FEATURES             Location/Qualifiers
     source          1. .478
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN
```

Alignment Scores:

Pred. No.:	1.86e-46	Length:	478
Score:	548.50	Matches:	109
Percent Similarity:	95.61%	Conservative:	0
Best Local Similarity:	95.61%	Mismatches:	2
Query Match:	89.19%	Indels:	4
DB:	6	Gaps:	0

US-09-989-735-345 (1-111) x AR337571 (1-478)

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Qy          1 MetGlySerSerSerPheLeuValLeuMetValSerLeuValLeuValThrLeuValAla 20
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         19 ATGGGGTCCAGCAGCTTCTTGGTCCTCATGGTGTCTCTCGTTCTTGTGACCCTGGTGGCT 78

Qy         21 ValGluGlyValLysGluGlyIleGluLysAlaGlyValCysProAlaAspAsnValArg 40
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         79 GTGGAAGGAGTTAAAGAGGGTATAGAGAAAGCAGGGGTTTGCCCAGCTGACAACGTACGC 138

Qy         41 CysPheLysSerAspProProGlnCysHisThrAspGlnAspCysLeuGlyGluArgLys 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        139 TGCTTCAAGTCCGATCCTCCCCAGTGTCACACAGACCAGGACTGTCTGGGGGAAAGGAAG 198

Qy         61 CysCysTyrLeuHisCysGlyPheLysCysValIleProValLysGluLeuGluGluGly 80
              ||||||||||||||||||||||||||||||||||||||||||||||      |||||||||
Db        199 TGTTGTTACCTGCACTGTGGCTTCAAGTGTGTGATTCCTGTGAAGAACT--GAAGAAGGA 256

Qy         81 GlyAsnLysAspGluAspValSerArgProTyrProGluProGlyTrpGlu-AlaLysCy 100
              |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        257 GGAAACAAGGATGAAGATGTGTCAAGGCCATACCCTGAGCCAGGATGGGAAGGCCAAGTG 316

Qy        100 sProGlySerSerSer--ThrArgCysProGlnLys 111
              ||||||||||||||||  ||||||||||||||||||
Db        317 TCCAGGCTCCTCCTCTACACCAGGTGTCCTCAGAAA 352
```